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# China Report

ECONOMIC AFFAIRS

No. 134



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6 May 1981

# CHINA REPORT

## ECONOMIC AFFAIRS

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## FINANCE AND BANKING

### ZHEJIANG REGULATES PRICES WITH TEMPORARY PROVISIONS

Hangzhou ZHEJIANG RIBAO 21 Feb 81 p 1

[Report: "Strictly Implement Price Policy, Seriously Maintain Price Discipline--Provincial People's Government Formulates Temporary Provisions On Rewards and Punishment"]

[Text] The Zhejiang provincial people's government has recently formulated "Temporary Provisions On Rewards and Punishment For the Strict Implementation of Price Policy," requiring all parts of the province to strictly implement price policy; seriously maintain price discipline; put a stop to unrestricted price increases, disguised forms of price increases, inflated or negotiated prices, and arbitrary fees; safeguard the interests of the state and consumers; maintain a basic stability of market prices; consolidate a stable and united political situation; and guarantee economic readjustment and the successful construction of the four modernizations.

There are eight clauses in the temporary provisions on rewards and punishment issued by the provincial people's government:

1. Commendation should be given for any of the following types of conduct:

1. Setting a good example by implementing state stipulated standards of prices and charges; strictly adhering to price discipline without terror throughout an entire year.
2. Clearly marking all commodity prices and noncommodity charges, with distinct list and negotiated prices and matching commodities and prices; buying and selling at reasonable prices; using a standard scale, ruler and an opinion record book; willingly accepting supervision by the masses; and using a system of price management that is relatively sound and price inspection that is regular and systematized.
3. Strictly implementing the variety of commodities for negotiated purchase and sale prescribed by the state as well as the stipulations of pricing principles; persevering in maintaining lower profits and higher sales; and exerting positive and active efforts to keep market prices down.
4. Daring to report to the authorities and expose conduct that is in violation of price policy and harmful to price discipline.

Commendation may be conveyed verbally or by written notification. Monthly, quarterly, or annual awards may be listed as a condition for awarded units.

II. All who behave in any one of the following ways are to be criticized and educated, and must correct themselves in the prescribed time:

1. Making errors in pricing through delay in adjustment of, failure to adjust, or incorrect specifications and grades, if the act is truly unintentional and no great losses have been incurred.
2. Reporting inaccurate cost information to the higher authorities because of unfamiliarity with the business or errors in calculation.
3. Being responsible for unlabelled, mislabelled, unpriced or mispriced items that do not match names, specifications, and grades.
4. Losing price documents and information or not delivering notification of price adjustment on schedule, but without causing losses.

III. For any one of the following types of behavior, a fine of 30 to 10,000 yuan will be imposed on the unit establishment; for the leader of the unit and the personnel responsible, cancellation of 1 to 6 months' reward money or a deduction of 10 to 30 percent from the salary of the month concerned:

1. Intentionally exceeding one's right to set or adjust the standards of prices and charges.
2. Freely raising or lowering grades and prices, expanding the scope of negotiated purchase and sale of commodities, inflating and negotiating prices, and purchasing at low prices to sell at negotiated prices.
3. Making unauthorized increases in factory and allocation prices, freely expanding and raising various price differences and ratio differences, and not implementing retail prices stipulated by the state.
4. Not following the stipulated authority but freely deciding on cutting prices and privately dividing up commodities.
5. Inventing all sorts of names, freely raising noncommodity charges, including those for the allocation of goods and materials, coordination of craft, communications and transportation, loading and transportation, repair services, housing rents, water and electricity, medical fees, tuition and miscellaneous fees, movie and theater tickets.
6. Substitution of goods of lesser quality, mixing inferior and fake goods, altering appearances, lowering quality and reducing quantity, shifting burdens to other people, and inflating prices in disguised forms.
7. Practicing fraud, falsely reporting costs, and intentionally changing the schedule of notification of price adjustment, thus damaging the interests of the state and masses.



IV. For any one of the following types of behavior, in addition to cancellation of at least 3 months' reward money and reduction of part of the salary of the month concerned, the leader of the unit establishment and personnel responsible should be disciplined according to the seriousness of the circumstances:

1. Revealing confidential price information, creating market chaos and significant economic losses to the state.
2. Manipulating commodity prices, mixing inferior and fake goods, substituting goods of lesser quality, and reducing quantity, all for private gain.
3. Colluding with the outside, smuggling and disposing of goods, making illegal purchase and reselling at a profit, engaging in speculation and profiteering, inflating and negotiating prices, disruption of the market, and exorbitant profiteering.
4. Performing shoddy work and using inferior material, carrying out rough and slipshod manufacture, substituting fake for genuine, mismatching quality and price, and causing serious incidents or economic losses for consumers.
5. Seriously violating price policy and refusing to implement the pertinent state stipulations, circumstances which are vile.
6. Taking revenge and making false accusations against staff workers who dare to report and expose behavior that violates the state price policy.
7. Harboring and conniving with personnel who have seriously violated price discipline, resisting inspection and supervision by the masses, and concealing behavior that violates price policy.

V. All illegal income resulting from violation of price policy is to be returned to the consumers wherever possible; otherwise it is to be taken over by the local public finance department. If the circumstances are serious, an appropriate fine should be imposed. The collection of illegal income and fines is to be jointly supervised and carried out by pricing departments above the county level and corresponding business departments in charge. If necessary, the pricing committee can directly notify the local bank in writing and deduct the amount from the account of the violating unit to be turned over to the public finance department. After the illegal income is turned over to the public finance department, the income from sales may be lowered. Fines should be taken out of the enterprises' funds or profit reserve and should not be taken from sale income; moreover, it should not be computed as a cost or business expense.

VI. Relations of subordination should be observed in dealing with units to be rewarded or punished. The matter should be handled by a business department in charge at a higher level, and inspected and supervised by a price committee at the same level. If necessary, the price committee can request a similar level of the people's government to handle the matter. Commendation and rewards, disciplinary action for cadres and individual staff workers should be handled according to respective stipulated areas of authority. For party members and cadres, particularly leading cadres who have seriously violated price policy and criminal law, price departments may propose and request disciplinary committees and judicial organs of all levels of the party to investigate and handle the matter.

VII. Plans based on the principle of economization and tight control should be put forward for the expenses for rewards and for price inspection of a mass character required by all levels of pricing committees. After checking by finance departments at the same level, funds can be transferred as deemed fit.

VIII. All districts, departments, and units must strengthen propaganda for the price policy, educate large numbers of cadres and staff workers so that they will self-consciously implement price policy, adhere to price discipline, establish a mentality of wholehearted devotion to serve the people, and transform the work styles in business and attitudes of service. They must arouse the broad masses to expose and report behavior that violates price discipline and rely on the masses to supervise prices. They must advocate concern for the overall situation and make even greater contributions with one heart and mind to stabilize the economy, prices, and the people's livelihood, and speed up socialist construction.

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CSO: 4006/233



## FINANCE AND BANKING

### BRIEFS

SAVINGS DEPOSITS INCREASE--Beijing, 19 Apr (XINHUA)--China's bank savings deposits rose to 44,700 million yuan in the first quarter of this year. This was 4,780 million yuan more than at the end of 1980, today's "PEOPLE'S DAILY" reports. Urban deposits increased by 2,250 million yuan while the rural deposits were up by 2,530 million yuan. The paper also says that the State Council has approved a report of the People's Bank of China setting up more savings branch offices to extend the service. A circular issued by the State Council to that effect urges the offices to improve their service and efficiency. [Text] [Beijing XINHUA in English 0247 GMT 19 Apr 81]

CSO: 4020/173

## ENERGY

### IMPORTANCE OF ENERGY CONSERVATION STRESSED

#### 'Fifth Energy Resource'

Shenyang LIAONING RIBAO in Chinese 6 Mar 81 p 2

[Article by Huo Qingshuang [7202 1987 7175]: "Developing China's 'Fifth Energy Resource;' Conservation--An Interview with Sun Hongzheng [1327 3163 6927], Deputy Director General of the Liaoning Energy Resource Society"]

[Text] Energy conservation and resource development are equally important. In the long run, great efforts must be made to develop energy resources. But it takes a long lead time to build up the energy industry, and there are immediate needs to be met. In the short run, we must give energy conservation high priority. Not only is conservation the way to solve the current energy shortage in enterprises and to develop production, but it can also improve industrial technology and management standards and is a strategic measure toward achieving a modernized industry.

In China, the level of industrial technology is low, equipment is outdated, and there is much waste of energy resources. This reveals that there is a great potential for energy conservation. Liaoning is a heavy industrial base with a large proportion of "energy-intensive" types of industries. The energy consumption in Liaoning is about 10 percent of total national consumption; this is the highest figure for all provinces. Liaoning should also lead the nation in energy-conservation work.

#### Energy Problems Also Exist in China

The energy shortage has become known as one of the four big problems that the human race faces--namely, energy, food, population, and environment--and it has become a major worldwide political problem.

Man cannot produce and live without energy, be it thermal energy, light energy, mechanical energy, electric energy, or chemical energy. Directly or indirectly, these energies come from the "big four" energy resources: coal, oil, natural gas, and hydropower. As the development of production progresses and the standard of living improves, the demand for energy becomes greater. Whereas the energy consumed

by the entire world in 1900 was less than 800 million tons of standard coal, that figure had jumped to 10 billion tons in 1979. The large consumption of energy has brought many problems; particularly worrisome is the question of whether energy resources will run out someday. For example, the world's explored oil reserve is 87.9 billion tons; at the annual mining rate of 3.1 billion tons, it will be exhausted in about 30 years. So man is beginning to develop new sources of energy, such as nuclear energy and solar energy. But it will be a relatively long time before these new energy resources can play a major role in the energy field. Hence, scientists all advocate the efficient use of resources and energy conservation. In order to show that energy conservation is just as important as developing the big four energy resources, they have given energy conservation a new name and call it the "fifth energy resource."

How important is the development of the "fifth energy resource" to China and to Liaoning? This reporter posed this question to engineer Sun Hongzheng [1327 3163 6927], thermal engineering laboratory director at the Anshan Thermal Energy Institute and deputy director general of the Liaoning Energy Resource Society. Sun was born in Hangzhou and came to Anshan after he graduated from the Department of Chemical Engineering at Zhejiang University in 1955. For a number of years he conducted research and design work on smelting furnaces at the Anshan Steel and Iron Institute and had many achievements. In 1974 he participated in the 10-year design and planning of Anshan steel, concentrating on the investigation of energy conservation. He loves his conservation work and takes it seriously. After the "gang of four" was smashed, Sun came to the Anshan Thermal Energy Institute, newly established by the Ministry of Metallurgical Industry, and felt right at home. He has since been devoting all his efforts to an investigation of energy consumption in the metallurgical industry and in the nation, and he has actively provided data and suggestions on conservation in the metallurgical industry and on national energy policymaking. His expert opinion on energy questions is therefore worth our attention.

China has relatively abundant reserves of various energy resources and has gained substantial achievements in energy development since liberation. China's current annual energy development and consumption come to approximately 600 million tons of standard coal, next only to the United States and the Soviet Union. The present energy situation is still quite tight, however, and shortages are seriously hampering the development of the national economy. There are two reasons behind the energy shortages: first, China is a nation with a population of 1 billion. On the basis of population, the annual energy resources for production and living is only 0.6 tons per person, barely 28 percent of the world average of 2.14 tons. This is the fundamental reason for energy shortages in China. Secondly, there is alarming waste in energy use in China. According to statistical data on some major industrial products, energy consumption per unit product is generally twice that of Japan, and several times in some cases. The effective energy utilization rate in Japan is as high as 50 percent, whereas in China it is only 28 percent—roughly equivalent to the world standard in the early 1950's. Waste in the use of energy has deepened the conflict of inadequacy in energy development and led to today's short supply of energy resources.

## What Are the Solutions for Energy Problems?

What are the solutions for China's energy shortage? The central government has made it clear: the national energy policy stresses both development and conservation. In the short term, conservation has priority. Technical modifications and structural revisions centered on conservation will be promoted. This policy is correct and suits the actual situation in China.

From a long-term point of view, China must accelerate its energy development industry. According to an analysis, the energy requirement for modernization is 1.6 tons of standard coal per person per year. Assuming that the population will be 1.2 billion in the year 2000, then the whole nation will need 1.9 billion tons a year. Even with efforts to improve management and technical standards and to use energy efficiently, the need is at least 1.2 billion tons, twice the present level. China has abundant coal reserves. Just the explored and surveyed reserves will last at least 80 years, assuming 650 million tons of primary coal are mined each year. China's hydropower reserve is the highest in the world, approximately 680 million kilowatts. But the present machine capacity is only 19 million kilowatts, a mere 2.8 percent of the total reserve, so the prospects for development are excellent. The hydropower reserve has been put this way: "The river water flows to the east, full of coal and oil." By developing just 1 percent of our hydropower reserve, 20 billion kilowatt hours of electrical energy per year can be obtained: This is equivalent to 7.8 million tons of coal. Owing to an insufficient exploration ability, it is not clear what our reserves of oil and natural gas are. Since most of the areas are yet to be explored, the prospects are also good. Although China has abundant resources for development, the imbalance in current mining and reserves is still not adjusted. It is unlikely that production of coal, oil, and gas will increase in 2 or 3 years, and there may even be some small fluctuation and decreases in production. New construction of coal mines, oilfields, gasfields, and hydroelectric power stations requires the further exploration of resources, large sums of capital, equipment, transportation and technical crews. Moreover, the lead time for construction is long and there are more immediate problems to solve. Therefore, on a national basis, conservation must be given high priority in the short term. For the various production departments, the only short-term solution to the energy shortage will have to be the active development of the "fifth energy resource"—conservation.

## There Is Great Potential for Conserving Energy

Even so, there is no reason to be pessimistic about finding a solution to our nation's energy problems. In China the low technological level of industry, the backward equipment, and the low utilization and extensive waste of energy resources are the very evidence of great potential for energy conservation. Calculations show that energy usage in China is 20 percent lower than that of advanced nations of the world. If the energy utilization rate is increased 1 percent per year for 10 years, it will be raised from the current 28 percent to 38 percent, a medium level by world standards. This will eventually lead to a saving of 150 million tons of standard coal (or 200 million of primary coal) per year, which is equivalent to the annual production of 10 Kailuan coal mines. This goes to show the enormous potential for energy conservation. In fact, China saved 23 million tons of standard coal in 1979 and 35 million tons of standard coal in 1980. And these savings were made merely by picking up things at the top, such as strengthening business management and adjusting the enterprise structure. Substantially more achievements can be obtained



by further improving the current enterprise structure and by developing technological revisions centered on conservation. Take, for example, the energy consumption in 1979 for the three major industrial products: the average consumption of energy per ton of steel was 1.6 tons of standard coal in China, whereas in Japan it was 0.77 tons; in China the generation of every kWh of electricity took 655 grams of coal, whereas in Japan it took 325 grams; in China every ton of synthetic ammonia consumed an average of 2.7 tons of standard coal, whereas the consumption in Japan was 1.2 tons. Based on the 1979 production level, just the three items above consumed an extra 70 million tons of standard coal as compared to Japan. That amounted to 13 percent of the total energy consumption in China. There is no doubt that tens of millions of tons of coal can be saved by just upgrading our technology, equipment, and management standards by one step. Engineer Sun Hongsheng recently wrote a paper entitled "Prospects for Energy Conservation in the Steel Industry," in which he summarized 30 energy-saving measures currently practiced by the steel industry. He believes that if these practices can be popularized, there can be an energy savings of 4 percent each year; that is, steel production by 1985 can be increased to 45 million tons without increasing the steel industry's total energy consumption.

### Liaoning Should Lead the Nation in Energy Conservation

Liaoning is a base of China's heavy industry where "energy-intensive" industries dominate and the energy usage is about 10 percent of the national total, the highest of all provinces. Liaoning has relatively abundant energy resources, and the energy industry is well developed. Each year, however, the energy resources imported from other provinces amount to 40 percent of the energy has become a serious problem that impedes economic development in Liaoning. On the other hand, precisely because we have many heavy industries consuming large amounts of energy, the potential for energy conservation in the province is very great. In the development of the "fifth energy resource," Liaoning should lead the nation.

Based on surveys of typical industries, there are three reasons for the alarmingly high energy consumption by industries: First, production has always been emphasized whereas conservation was neglected. Backward operation and mismanagement cause 40 percent of the waste. Second, equipment is obsolete. Not only is old equipment not replaced, but the equipment of some new enterprises is already outdated. This causes another 40 percent of the energy waste. The third reason is the low quality of the materials (e.g., low-grade ore) and fuel. This causes extra energy consumption and 20 percent of the waste. Therefore, the energy conservation task can be divided into three steps: The first step is to collect the "easy wealth" by strengthening management and improving operations. Although there have been good results in the past 2 years, efforts should be continued to exploit the potential in this area. The second step is to speed up energy-saving modifications for presently available equipment, under the guidance of the overall planning of the enterprise. Most enterprises' conservation efforts should already have entered the first stage. In the third step, technologies and facilities should be totally modified in those enterprises with such ability. This work might not proceed on a large scale before 1990.

Energy conservation is not an isolated issue. The energy utilization rate reflects the technology level and management standards of the entire national economy. Energy conservation does not mean passively "using less" but actively developing. Energy conservation not only will ensure the development of our national economy but also will promote standards of technology and management and reduce pollution and protect

the environment as well. Thus, development of the "fifth energy resource" is not only a major undertaking for solving the present energy shortages but is also a strategy for achieving modernization. It is about time to advocate such an important issue.

At the conclusion of our interview with Sun Hongsheng, he expressed his willingness to accompany this reporter to various parts of Liaoning to explore and investigate the ways and means for conservation. We are very happy to hear that.

### Conservation Potential of Furnaces

Shenyang LIAONING RIBAO in Chinese 7 Mar 81 p 2

[Article by Sun Hongsheng of the Anshan Thermal Energy Institute and Reporter Huo Qingshuang: "The Conservation Potential of Furnaces Is Great"]

[Text] Where should we start in our exploitation of the "fifth energy resource?" Management, operation and modification of various types of furnaces are of crucial importance in energy conservation. Energy resources as we know them are mostly fuels, and almost all fuels are burned in some kind of furnace or industrial device to be converted into heat. Heat can be used directly or converted into mechanical and electrical energy by heat engines and then used. In China more than 90 percent of the energy is used through heat; the world average is over 85 percent. Therefore, large quantities of energy can be conserved only through sound management, operation and modification of various furnaces, including blast furnaces for iron smelting, open hearth furnaces and electric furnaces in steelmaking, heating furnaces used in steel rolling, steam burners in hydroelectric powerplants, heating devices in petrochemical plants, kilns in cement plants, and home heating furnaces.

How great is the energy conservation potential of furnaces in Liaoning? Let us take a look at the heating furnace at the Shenyang Municipal Steel Rolling Mill No 3. This mill, located in Dadong Ward, used to be called Shenyang Small-Scale Steel Rolling Mill. Since 1964, when the plant was built, until the first half of 1979 the oil consumption of the furnace in this plant was always an alarmingly high figure. Every ton of steel consumed 180 kilograms of oil at this mill—three to four times higher than that of other furnaces in the same profession. This mill was singled out for criticism and dubbed an "oil tiger" in meetings at the Ministry of Metallurgical Industry. With each ton of steel wasting 100 kg of oil, and 30,000 tons of steel rolled every year, more than 3,000 tons of oil were wasted each year. This mill certainly deserved criticism.

Why did this furnace consume so much oil? The cause was actually not all that complicated: it was because plant leaders paid no attention to energy conservation in the past. To begin with, the furnace's capacity is large but the steel rolling ability is low, and this "big horse pulling a small wagon" operation went uncorrected for a long time. Moreover, the furnace itself had many problems, and no one paid any attention to the great amounts of heat lost by the furnace. On top of that, there was no established operating procedure or specified amount of oil usage. No wonder the oil consumption was so high. As a result of criticism, the mill shut the furnace down for half a month and made modifications during August and September of 1979, with the assistance of various departments and sister enterprises and the guidance of higher leaders. Owing to a shortage of time, a partition wall was built



at the center of the furnace so as to use only one side of the furnace and solve the problem of a "big horse pulling a small wagon." In addition, insulation wrappings were installed on the furnace's water pipes. With just these preliminary modifications, the consumption of oil per ton of steel dropped from 170 kg in the first half of the year to 80 kg in the fourth quarter.

In comparison with other furnaces of the same industry, 80 kg was still too high, so comprehensive major repair work was done between July and September 1980 and, based on advanced experience, detailed modifications were made. For example, the transverse water pipe that carried away a large amount of heat was completely eliminated and heat-resistant steel tracks were installed on the two remaining water pipes. The furnace was extended by 5 meters to allow sufficient preheating of the steel billet. The two 6-inch burner tips were replaced by three 3-inch burner tips that could be partially closed to maintain the temperature, so that the operation could be made more convenient and versatile. Air preheaters were installed in the flue to heat the incoming cold air to a temperature of 150°C. After these modifications were made, the consumption of oil per ton of rolled steel dropped further in the last quarter of 1980—from 80 kg of 54.8 kg. And this was achieved at 40-percent operating capacity. With increased operation, the consumption of oil per ton of rolled steel can be reduced even further.

For Steel Rolling Mill No 3, a reduction from 180 kg to over 50 kg may be considered a substantial improvement, but it still falls behind other progressive plants. For example, oil consumption for similar small-scale steel rolling operations is 35 kg in Tianjin and 36 kg in Shanghai. The consumption of oil per ton of rolled steel at the No 2 plant of the Shenyang Steel Rolling Mill was also reduced to 39.6 kg in 1980 after major repairs and modifications were made to its heating furnace. This saves 1000 tons of oil per year. In Japan the national average is less than 30 kg. It is clear that the potential for conservation in furnaces is still great and that a lot more can be done. If every furnace in China can gradually approach advanced performance levels, the potential for conservation will be 1 million tons of standard coal just in those steel industry furnaces that burn oil, coal, and gas. That is an enormous figure!

Can this potential for conservation be exploited? The experience of the Shenyang Steel Rolling Mill, Shenyang Municipal Steel Rolling Mill No 3, and Anshan Medium Steel Rolling Mill shows that it is not difficult to succeed as long as we really take conservation seriously and begin to make practical technical modifications to the furnaces. What they have done is mainly to solve the following problems: 1) modify the size of the furnace bosh and make it compatible with the steel rolling capability; 2) modify the burner tips for more complete burning of the fuel and for flexible adjustments based on production demand; 3) improve the thermal insulation of the furnace body, install furnace doors and covers, and eliminate superfluous water pipes in the furnace to reduce various forms of heat loss; and 4) add facilities to recover the flue heat. Since equipment is relatively backward and energy waste is very great in China, highly conspicuous results can be obtained by merely taking the usual conservation measures. If new technologies can be added as well, the effects will be even more striking.

There is a saying in Japan that puts conservation lightly: "Conservation is easy; all you have to do is look around and eliminate the waste." But the main thing about wasting energy is that it does not have a definite form, and what and how much is

wasted often cannot be realized intuitively. Moreover, people often take a good deal of waste for granted. For example, flames coming out of a furnace and smoke coming out of a chimney are mistaken as normal phenomena. This goes to show that poor management and backward equipment have reached an intolerable degree. Many furnaces in plants do not have gages, and no tests have been performed to find out how much fuel they burn, what their thermal efficiency is, and what the heat loss is. How can energy be saved under these conditions? To correct all this and succeed in conservation, we must first convert the various amounts of energy consumption and loss into scientific data by institutionalizing enterprise thermal balance and equipment thermal balance. To grasp enterprise thermal balance, we need to carry out an energy accounting and compare it with similar enterprises and successful enterprises. Wherever energy consumption is high, and whichever item uses too much energy, that is where we should concentrate our conservation efforts. In equipment thermal balance, the fraction of effective heat, thermal efficiency, and items of heat loss are measured by actual thermomechanical equipment to pinpoint their problems so that solutions can be found accordingly. For this reason, thermal balance is called "thermal diagnosis" in Japan. Experience has shown that "thermal diagnosis" not only can locate problems qualitatively but also can indicate quantitatively the magnitude of the problems and how much energy can be saved by solving them. Whenever furnace modifications are made according to a diagnosis of thermal balance, better results are obtained with less effort. Enterprise thermal balance and equipment thermal balance are receiving increasing attention as two scientific tools in conservation by enterprises in various parts of Liaoning. The steel industries of Liaoning are now compiling thermal balance sheets on a quarterly and a yearly basis. Anshan Steel has formed a professional thermal measurement and adjustment team. The thermal-mechanical measurement team of the Anshan Thermal Energy Institute has made thermal balance tests on dozens of furnaces in Liaoning and around the nation, and their work has been well received. We believe that by using scientific methods we can definitely find the prime targets and solutions for conservation in various enterprises, and that by achieving the maximum amount of conservation we will move our national economy forward during the period of readjustment.

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CSO: 4006/247

## ENERGY

### SOME VIEWS ON FARM MACHINERY ENERGY CONSERVATION

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese No 3, 1981 p 2

[Article by Qiu Kongguang [5941 1313 0342]: "Some Viewpoints On the Energy Policy and Energy Conservation as They Relate to Farm Machinery"]

[Text] Editor's note: At a specialists' forum on long-term planning, held by the Ministry of Agricultural Machinery, Deputy Director Qiu Kongguang [5941 1313 0342] of the Shanghai Internal Combustion Engine Institute expressed his views on the energy policy and energy conservation as they relate to farm machinery. The following is an excerpt.

1. In developing and conserving our energy resources, we should emphasize the conservation aspects. The energy sources that farm machinery can exploit include producer gas, electricity, hydropower, wind power, methane, and solar power. Among these, producer gas and methane require associated energy-generating devices. Generally speaking, coal, wind, hydropower, and methane can be used only in equipment with a fixed location. The efficiency of solar energy is still low and needs further investigation. Fuel oil is easy to transport and store and can be used in fixed as well as mobile equipment. Since many pieces of farm machinery are self-propelled, the major energy source in planning for the next 10 years will still be fuel oil. In the meantime, efforts should be made to investigate the exploitation of other energy sources to supplement the inadequacy of fuel oil. The direction of major attack should therefore be in diesel engine energy conservation.

2. The emphasis in diesel engines energy conservation should be on sound maintenance and usage. Conservation measures should be multifaceted, and efforts should be made to reduce fuel consumption in actual usage. The major factors that directly influence fuel consumption in current diesel engines are: 1) The low technical level in utilizing the diesel engines. The great majority of power equipment on Chinese farms is used by production teams. Due to the low technical level of the operators, there are many problems in maintaining the machinery. Conditions leading to improper operation of the diesel engines include incorrect fuel injection pressure, incorrect advance, improper intake and exhaust valve clearances, defective fuel filters, and out-of-spec piston ring gap and cylinder clearance. These abnormal conditions not only reduce engine life and efficiency but also increase fuel consumption. For example, the specification requires the injection advance to be 16-20 degrees ahead of the dead point, but in actual use it has been found to be as little as 10 degrees and as great as 30 degrees. These incorrect settings increase fuel consumption by 20 or 30 grams per horsepower-hour.

2) Mixups in fuel supply and management. There are places where types of fuel are not supplied according to seasonal requirements, even to the extent whereby summer fuels are supplied in the winter. Some transportation and stock of the fuel do not meet requirements; sometimes fuels are used before precipitation, thus affecting engine life and fuel consumption adversely. There are even more problems connected with the supply of motor oil. First, the quality of the oil is poor, and it turns black and viscous in prolonged use. Second, due to supply shortages, motor oils have to be used beyond their due date for change, and when they are not available, other oils are used as substitutes. Third, different oils are mixed together, regardless of their type and number. This improper use of motor oils also greatly increases fuel consumption. Test results show that fuel consumption per horsepower-hour when No 8 motor oil is used is 4 grams less than when No 11 oil is used.

3) Improper combination of machines. The current practice of evaluating diesel engines based on rated fuel consumption is very unrealistic, because increased fuel consumption at other power outputs is often ignored in the interest of lower rated consumption. When diesel engines are used in conjunction with other equipment, the working condition often varies and the machine is working at its rated point only part of the time. For diesel engines in single-purpose combination, their fuel consumption should be evaluated on the basis of a composite of several working conditions. For diesel engines in multipurpose combination, there should be several different characteristics curves in order to obtain the optimum matching. At present, the matching of machine combinations often demonstrates such phenomena as the large horse pulling the small wagon and the small horse pulling the large wagon; both result in a pronounced increase in fuel consumption.

4. Methane engines have the most practical significance in the development of new energy sources because they are quite effective in saving gas. In the production of methane gas with hog manure, it has been estimated that one hog can produce 0.1 cubic meter of methane per day. The heat value of methane is 5,000 kilocalories per cubic meter, while the heat value of diesel fuel is about 10,000 kilocalories per kilogram; thus, one day's manure from one hog is equivalent to 0.05 kilogram of diesel fuel. If a county has 600,000 hogs and half of their manure is used in methane production, then the supply of methane in one day is equivalent to 15,000 kilograms of diesel fuel. The main problem in the promotion of methane fuel is the construction of a methane pool. The technology of converting diesel engines to burn methane is relatively easy to solve; it can also be used in generating electricity when coupled with a generator. At the present time, farmers buy diesel engines and convert them. The drawbacks are large ignition fuel demand, low thermal efficiency, and unstable operation. The [diesel engines] developed by scientific research units are better than the simple models converted by the farmers, but no superior designs have been chosen and finalized. We hope the responsible research departments will strengthen their development work and produce a standard model product.



## ENERGY

### BRIEFS

**FUJIAN POWER GENERATION**--From January to December 25, 1980, the total power generation of power plants at county and higher levels in Fujian Province was 4.2 billion kilowatt hours (kwh), which fulfilled the annual plan ahead of schedule by 6 days, and showed an increase of 9.7 percent over that of the previous year. Hydropower is the mainstay of the power industry; thermopower is only supplementary. After February 1980 the two power networks of north Fujian and southwest Fujian were combined into one for better regulation of the hydropower and thermopower supplies, and to provide the 43 counties in the nine prefectures (municipalities) of the province with a more reliable power source. The control departments of the network and its power plants fully used hydraulic energy during the period when there was plenty of water, strictly enforced economic management, and improved comprehensive efficiency. The province increased its power output by over 270 million kilowatt hours, 12.8 percent higher than that of the previous year. The hydropower plants of Gutianqi and Ansha strengthened the regulation of reservoirs, fully used flood-water in areas between reservoirs, adopted such effective measures as generating power with water before it flows into the reservoir, saved 266 million cubic meters of water for power generation in the whole year, and increased the power output by more than 85 million kilowatt hours. Last year, our province's power system also vigorously reduced the rate of fuel consumption. The standard coal consumption rate for each kilowatt hour of thermopower decreased from 609 grams in 1979 to 507 grams. In the whole year, the power system saved 67,000 tons of standard coal and 6,000 tons of oil for combustion supporting power generation. All power generation and supply enterprises under the provincial government strengthened economic accounting, increased income and reduced expenditures. The power sales units cut down their cost as planned by 9.6 percent. The annual profits exceeded the plan by 19.94 percent [Text] [Fuzhou FUJIAN RIBAO in Chinese 6 Jan 81 p 1] 9039

**BEIJING HYDROPOWER GENERATION**--In 1980 the small hydropower generators in the suburbs of Beijing made further progress. Their total annual output was 22.64 million kilowatt hours, higher than that of 1979 by 46 percent. They helped the collectives increase their income, and also contributed to the alleviation of the shortage of power supply in this municipality. In the first half of last year, the municipal departments concerned held a conference of communes and production brigades on the work of small hydropower generation, and explained the instructions of the leading comrades of the CCP Central Committee Secretariat on the development of small hydropower generation. The leading comrades gave these instructions while making an inspection tour in suburban Beijing. In the past year, more communes and production brigades built small hydropower stations by using local waterpower resources. In Miyun County alone, eight small hydropower plants were newly built on the Chaobe and Baihe rivers, the capacity of the installations reached 2,506

kilowatts, and the designed output was 9.34 million kilowatt hours. In Mentougou District and Fangshan County, a number of small hydropower stations were also completed. By the end of last year, the total capacity of small hydropower installations in the suburbs reached 6,000 kilowatts. The small hydropower plants set up by suburban communes required small investments and gained quick results. The related departments of the government and Beijing Municipality gave the communes and brigades strong support from designing to the work of construction, so that they began their work according to the plans, their construction was inspected, and the completed projects were examined before they were accepted. All finished projects have been incorporated into the state power networks for transmission and, to a certain extent, alleviated the shortage of power supply of the city. [Text] [Beijing BEIJING RIBAO in Chinese 7 Feb 81 p 1] 9039

BIOGAS UTILIZATION--This year Guangdong Province made advancements in the use of biogas. By the end of November, the whole province had built 13,040 new biogas ponds, more than the total number of ponds built from 1973 to 1978. The grand total of ponds built in the province numbers more than 44,000. According to statistics, the 36,500 biogas ponds in Guangdong, which are now in use, can each year save some 2 million dan of fuel wood and straw (equal to some 60,000 tons of raw coal) and 700 tons of kerosene for lighting, the 21 biogas power plants can every day supply more than 4,000 kilowatt hours of electricity. This year Guangdong Province will further build and expand biogas power plants at Junqiao in Poshan, at Liede in Guangzhou and at Shajiao in Shunde, so that the total capacity of biogas power installations will reach 664 kilowatts, higher than that of last year by 60.4 percent. [Text] [Guangzhou NANFANG RIBAO in Chinese 24 Dec 80 p 1] 9039

BIOGAS RESOURCES--There are abundant biogas resources in China. According to an estimate, from fuel straw and human excrement alone, if all of them are fermented in biogas ponds, every year we can draw more than 130 billion cubic meters of biogas. These huge resources can not only meet the needs of our rural population for fuel in daily living but also supply energy to 5 million 5-8 kilowatt marsh gas power plants operating 6 hours daily. There are great possibilities of also making biogas from the garbage and sewage of cities. Take Guangzhou Municipal No 4 Foodstuffs Company as an example. Last year they built a biogas pond which daily produces 40 to 50 cubic meters of biogas. [Text] [Beijing RENMIN RIBAO in Chinese 20 Jan 81 p 2] 9039

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## **MINERAL RESOURCES**

### **LARGE MINERAL DEPOSITS FOUND; GOLD PRODUCTION UP**

#### **Silver, Marble Deposits**

Beijing RENMIN RIBAO in Chinese 23 Feb 81 p 4

[Article: "Large Vanadium, Silver Deposit in Hubei; New Marble Find in Guangdong"]

[Text] The Hubei Geological Bureau achieved new results last year in its search for mineral deposits: several important industrial ore deposits were discovered and affirmed by surveys to be a large compound industrial mineral deposit of vanadium and silver. Changes in grade and thickness are comparatively steady, and the quality is excellent. The mineral deposit now under control is 1.8 km long, and its average silver content is 107 grams per ton. According to a preliminary estimate of the reserves, the deposit is very large. In addition, there are associated [deposits of] selenium and germanium that can be used for many purposes. Recently, experts from abroad who visited the area of the deposit affirmed [all this] and commented on it favorably.

In Yingde County, in the mountainous area of northern Guangdong, a large marble deposit recently was found. The marble deposit is preliminarily verified to have reserves of more than 1 billion cubic meters spread over 18 communes in the county. Two contracts have been signed with foreign merchants to produce US\$930,000 worth of marble a year.

#### **Diatomite Discovery in Yunnan**

Kunming YUNNAN RIBAO in Chinese 24 Feb 81 p 1

[Article by Xiao Yongfu [5135 3057 4395]: "Large Diatomite Find in Yunnan"]

[Text] Yunnan's geological workers found a deposit of diatomite in Xundian County last year. Preliminary geological work and chemical examination have proved that the deposit is large in size: its area is 6 square km and its thickness is 95 to 330 meters, with an average [thickness of] 130 meters. The quality is fine; the diatomite dioxide content is generally above 64 percent, and is 93 percent at the highest.

Diatomite is a mineral with such properties as large porosity, strong absorption, sound insulation, heat insulation, and light texture; it is acid-proof and resistant to high temperature. It is widely used in the steel, metallurgical, heat-treatment, power machinery, ceramics, sugarmaking, and winemaking industries. It can also be used to prevent pollution and protect the environment. With the diatomite found in Xundian County, the relevant departments in our province have been provided with rich sources of raw materials and have gained experience in searching for mineral deposits of this type.

#### Gold Production in Hubei

Wuhan HUBEI RIBAO in Chinese 8 Feb 81 p 1

[Article by Hu Zuoding [5170 0155 1353]: "Hubei Gold Production Up in 1980"]

[Text] The production of gold has had gratifying results in our province. The gold production target for 1980 was overfulfilled 57 percent—an increase of 28 percent over the previous year. The annual target for finished gold production was overfulfilled 70 percent—48 percent higher than in the previous year. Production of silver also overfulfilled the annual target by 80.4 percent.

Hubei's gold-producing centers carried out party policy seriously and promoted the production of gold last year. Gold mines paid attention to adjusting the relationship between extraction and tunneling and reformed irrational technological processes. During the dry season, commune members in Jingzhou, Xiangyang, and Yunyang along the Yangjiang and Hanjiang were organized to pan gravel for gold. Production of gold increased 392 and 154 percent, respectively, in Xiangyang and Jingzhou.

#### Gold Purchases in Zhejiang

Hangzhou ZHEJIANG RIBAO in Chinese 18 Feb 81 p 1

[Article by Fan Ren [3127 0088] and Sheng Liang [0524 5328]: "Zhejiang Gold Purchases Up in 1980"]

[Text] Gold purchases in Zhejiang increased 247.3 percent in 1980 compared with 1979. The range of increase was even greater in Hangzhou and Shaoxing.

The state adjusted the purchase price of gold last year by increasing it 430 percent per gram. To ensure good results in purchases, the Provincial People's Bank and its branches held "gold and silver purchase training courses," enabling a group of young workers to master the technique of distinguishing gold and silver. The purchasing personnel from the bank branches went among the masses to publicize the state purchase policy and to get the masses to conscientiously resist smuggling and trafficking in gold and silver and sell to the state their gold and silver ornaments, such as gold bars, necklaces, earrings, and bracelets.

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## MINERAL RESOURCES

### BRIEFS

**LIAONING GOLD OUTPUT**--Recently a rally was held in Donggou County, Liaoning Province, to commend 4 communes, 5 production teams and 36 commune members for their achievements in gold extraction. The county extracted 5,245 liang of gold last year. [SK301405 Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 27 Mar 81]

**HEILONGJIANG GOLD MINING**--Huanan County, Heilongjiang Province, produced 1,047 liang of gold in 1980, an increase of 41.5 percent over that of 1979, thus becoming Heilongjiang Province's first gold producing county with an annual gold output exceeding 1,000 liang. In a period of 5 years, from 1974 to 1979, this county produced a total of more than 4,400 liang of gold. Gold mining communes increased from 5 to 8 and mining spots from 20 to 35. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Mar 81]

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## INDUSTRY

### CONTROL OF MAJOR CITIES' INDUSTRIAL PRODUCTION URGED

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE NEWS] 10 Feb 81 p 3

[Article by Li Hai [2621 3189] and Yao Dechao [1202 1795 6389]: "Industrial Production in Major Cities Must Be Brought Under Control"]

[Text] Since the founding of the People's Republic, we have quickly restored the run-down cities which were utterly devastated and developed them into new comprehensive industrial cities. They have played an important role in our national economy. However, something has gone wrong with our policy of urban construction, which brought about serious imbalances in the economic structure of the cities, particularly in the major cities. To solve such problems and to prevent them from growing worse, we must have control over the growth of the big cities, and especially over the growth of their industrial production.

The reasons are as follows: First of all, if the growth of industrial production in major cities is not brought under control, we can never effectively control the growth of these cities. Over many years, the major cities have expanded boundlessly, with increasingly more problems, and more and more acute contradictions. All these are related to the blind growth of industrial production. Secondly, the development of socialist economy requires a rational distribution of national economy, including a rational distribution of industries. With the rational distribution of industries, we can easily use cities' flourishing economy, advanced technology and high labor productivity to arm and improve agriculture and the backward areas. Otherwise, it will undoubtedly affect the rational distribution of the national economy, increase the burden of major cities, and bring about a series of problems difficult to solve. By carefully developing inland industry, energetically building medium-size and small cities and towns, and developing satellite cities and towns, we can not only solve various problems but also effectively reduce the pressure on the major cities. From a long-term point of view, with the development of inland and medium-size and small cities and towns, a better distribution will win greater economic benefits. This will be far superior to construction in major cities with inadequate resources. Thirdly, under certain conditions, the capacity of any city is limited to a certain extent. A major city must have its limits. Within the limits, a certain number of factories may be built, and correspondingly so many residential houses may be constructed, then so many shopping centers, schools and hospitals may be established in proportion, and also there will be certain limits for building so many roads, accommodating so many vehicles and planting so many trees according to the size of the city. On the basis of the requirements for building a modern city, these proportional relations are even more important. The boundless development of industry, including heavy and light industries, in violation of these limitations, will certainly cause difficulties to people who "cannot find a house to live in, cannot have meals at a restaurant, cannot find a bus to ride in, and cannot have schools and hospitals."



When a city continues to expand, the pressure on the people becomes increasingly great. Bringing industrial production under control never means not to elevate the level of production; however, such elevation should be in the development of high-grade, precision and advanced products by the existing enterprises. Moreover, such development should cause the least burden, pressure and pollution to the city. Fourthly, the major cities should give positive support to agriculture and to the economic development of the frontier regions. The major cities cannot grow without the support of agriculture and the people of the whole country. They cannot accumulate funds only for their own development, and should energetically arm agriculture and give aid to the interior of our country. Without doing this, they do not contribute to the overall development of national economy. The portion of funds retained by the major cities themselves generally should not be used to build new factories and enlarge the scale of production, and should be used for urban construction, public services and welfare closely related to people's living in order to arouse socialist enthusiasm among the masses.

It can be seen from the foregoing that bringing the growth of major cities, especially the growth of industrial production, under control is not decided by people's casual subjective wish, but comes naturally from the objective law of development for urban construction.

In the past, under the guidance of such wrong ideas as "putting production before people's livelihood," putting undue emphasis on "changing cities of consumption into cities of production" and making subjective attempts at speed, the major cities set up too long a front of capital construction, made too many investments in production, and overinvested in heavy industry, so that there were proportional imbalances in the economic structure of major cities, the "bones" and the "flesh" came apart, and the debts became increasingly numerous. Take Beijing as an example. Among the financial expenditures in the period of the "Fourth Five-Year Plan," the expenditure for capital construction rose from 29.4 percent in the period of readjustment [1963-1965] to 42.3 percent, and again increased to over 50 percent in 1979. The expenditure for investments in production increased from 68.1 percent in the readjustment period to 80.9 percent, of which that for investments in industry increased from 31.1 percent in the readjustment period to 69.3 percent. Among investments in industry, those in heavy industry increased vigorously from 62.5 percent in the readjustment period to 90.2 percent. In 1979, the amount of investments in heavy industry still reached 76.8 percent. When the capital construction front is too long, when industry, especially heavy industry, is overdeveloped, and when the distribution of industry is too dense in urban areas, the industrial enterprises will certainly strive with other enterprises for funds, manpower, sites and energy source, and consequently it will bring about proportional imbalances and many debts. Take the urban traffic of Beijing as an example. The traffic roads of the three round-the-city routes are only some 270 kilometers, and the density of motor vehicles reaches 470 vehicles per kilometer. In comparison with Japan's Tokyo, Tokyo has 20 times as many motor vehicles as Beijing, but the length of its urban roads is 40 times that of Beijing, and the number of its motor vehicles per kilometer is only half that of Beijing. Again, take Liaoning Province as an example. Since the founding of the People's Republic, its urban construction and its public utilities and services forged ahead to a certain extent; however, their development could not meet the needs. At present, for the 11 million urban population of this province, the average housing area per capita has dropped from 3.6 square meters in 1952 to 3 square meters. More than a million people either do not have their own home or live in overcrowded households. Urban water supply is short by 20 percent, one-third of the urban areas have

no sewerage, and one-third of city roads are laid with earth and stone. In the cities, on the average every street-car or bus serves 3,500 people, only 14.5 percent of urban areas are planted with trees, the number of commercial stores and services has been reduced or combined from some 70,000 in 1957 to only little over 8,000, one-third of the middle and elementary schools have been compelled to accommodate both secondary and elementary students, on the average 3.4 hospital beds serve every thousand city residents, there are only 112 cinema houses in all the cities and towns of the province, and on the average nearly three performing groups can have a theater for their performances. Many such problems indicate that at present our urban economic construction is proportionally out of balance, and has made lopsided development. The time has come for solutions. Obviously, all such problems cannot be solved by increasing the funds for capital construction. The question is how to rationally use the funds, and how to rationally readjust production and the economic structure. Only by bringing urban industrial development under strict control can we gradually and practically solve these problems.

At present, our urban construction has become a weak link in the national economy. In light of this situation, our policy towards the development of major cities can only be to bring the growth of major cities under control, and to bring the development of their industrial production under control. In the long-term point of view, we should maintain the production of major cities at its present level, and exert our main efforts in making readjustments, undertaking urban construction and improving people's livelihood. We can no longer continue to build new industrial enterprises or expand the existing ones, so that the cities grow boundlessly. Otherwise, the cities will become bloated from full load to overload, and their structural imbalances will become even more out of balance. Of course, every city has its own characteristics. We should take the direction of urban development into consideration according to the historical and practical conditions of each city. For instance, some cities may be built into scientific and cultural centers, others into bases of heavy industry, still others may be developed for tourism, and so forth. However, no city should be overloaded, for example Beijing Municipality. At present the scale of its industrial production has exceeded the capacity of usable land for urban construction and the supply of available water resources, has put excessive burden on the non-productive facilities and the service personnel, has exhausted the reserve of talents in technology and economic management, and has gone beyond the possibility of keeping up simple reproduction. In Beijing, the proportion of industrial personnel in the total number of urban personnel, at its peak, increased from 29.8 percent in 1957 to 46.9 percent, and remained at over 43 percent in 1979. In Washington, the proportion of industrial personnel is only 3 percent. In comparison with Paris, the capital of France, which has the highest proportion of industrial personnel in the world, that of Beijing is even higher by 14.5 percent. For this reason, the scale of production in Beijing Municipality should be brought under strict control, and no more industrial enterprises should be set up in the municipality. Those enterprises inside the city which impair the city's appearance and cause serious pollution should be moved out without exception. In 1973 Premier Zhou said that we did not want so many factories in the capital, there should be fewer of them or none at all, and factories which cause pollution should especially be situated outside the capital. Last year, the CCP Central Committee's Secretariat made a four-point proposal on construction in the capital with the request that Beijing should be built into a first-rate beautiful city of the world. Therefore, Beijing cannot continue to take the development of industry as its principal task, and cannot adopt the policy of expanding without restriction the scope of industrial production. As another example, Shanghai is



the largest multiple-producing industrial city of our country and, according to its historical characteristics and economic conditions, may be built into our country's important industrial, foreign trade and science and technology base. However, on its area of 140 square kilometers, the population, housing, traffic and transportation have long been in a state of saturation. Not only should it not continue to build large industrial enterprises, but also it should restrict the growth of medium-size and small ones. In this city, industrial production can grow for only those high-grade, precision and advanced products which employ a few people and cause no pollution to minimize the burden on the city. Meanwhile, enterprises unsuitable inside the city should be moved out or dispersed to places which produce raw materials. We should also employ skilled technicians to help inland medium-size and small cities develop production. Only by making rational readjustment can Shanghai truly develop its strong points and avoid its shortcomings, and bring into play its real superiority. Here, it is not difficult to see that resolutely bringing the growth of our major cities, especially their industrial production, under strict control is of such important significance.

Bringing the growth of urban industry under control is a problem which any city must face in the course of development. If we recognize it and bring it under control one year earlier, we can act on our own initiative one year earlier; otherwise, it will be one year too late. We hope that this issue will attract general attention.

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## INDUSTRY

### SHIP TURBINE ENGINEERS' ANNUAL MEETING CALLED SUCCESSFUL

Beijing CHUANBO SHIJIE [SHIP WORLD] in Chinese No 2, 15 Jan 81 p 3

[Article by Li Bingyan [2621 4426 3508]: "Ship Turbine Committee of Chinese Shipbuilding Engineers Society Holds Annual Meeting"]

[Text] The ship turbine committee of the Chinese Shipbuilding Engineers Society held its annual meeting from 19 to 24 December 1980 in Nanjing. A total of 270 representatives attended the meeting. Among them, 171 were members of the seven departments of the ship turbine committee: the power device department, the turbine and boiler department, the diesel engine department, the auxiliary machinery department, the vibration and noise department, the automation department, and the ship electricity department. Some 59 authors present papers at the meeting, and there were also 40 specially invited representatives and guests. This was a big meeting of the Chinese shipbuilding industry, with college instructors, engineers, and technicians from research institutes and plants and technical management people from application departments all gathered in one place. Sixty-four papers were presented covering four different areas, and seven outstanding papers were selected. These papers dealt with ship turbine engineering achievements and demonstrated the level of turbine technology research in China.

Deputy Director General Shen Yuerui [3088 1471 3843] of the Chinese Shipbuilding Engineers Society gave the opening address. He expressed congratulations to the annual meeting and stressed the need to strengthen academic exchanges between Chinese ship turbine engineers and their counterparts abroad. Directors of various departments gave a general review and commented on recent developments and future trends in their special fields. Turbine committee chairman Professor Li Mingwei [2621 6900 1983] gave a talk entitled "Review of Ship Energy Resources and Conservation," in which he pointed that the concept of conservation as applied to transport ships can be expressed directly as maximum transportation volume with minimum fuel cost. The conservation work can be divided into two large areas: on the one hand, researchers and designers should try to reduce fuel costs in designing new ships and modifying old ones, while on the other hand ship users should try to increase the annual transportation volume of each ship by thoroughly understanding its characteristics.

In a presentation entitled "Current Status and Development Prospects of Domestic and Foreign Diesel Engines," diesel engine expert engineer Xiong Lin [3574 3829] ex-

pressed his views on technology import problems relative to maritime diesel engines. After first reviewing the various models of machinery, compressors, shaft couplings, speed-reduction gears, and manufacturing technologies of certain parts imported by different departments, he then proceeded to point out that China has purchased the right to manufacture a number of foreign diesel engines, but that some people are concerned that this may leave no more design and research work. Xiong believes there is no reason to be pessimistic. He said that China had not been sufficiently discreet in the past in purchasing permits, and the results had been less than desirable. Xiong suggested that future decisions should not be based on officials' notions, and that opposing opinions should be listened to more carefully. Technically speaking, the permits we bought were for models already technically behind, compared to foreign models under development and testing now. We should not again purchase permits when new models are put into production, but instead should modify and improve the permits already purchased, in line with our situation, so as to catch up and surpass foreign standards. There are numerous things that we should do. Didn't Japan buy the Pierre Stik [Pi-er-si-di-ke] permit, improve on it, and turn around and sell the permit back to France? Besides, we have only bought the know-how and not the "know-why"; thus there is plenty of research work to do. Moreover, there are gaps or essential voids in the area of maritime diesel engines in China. For instance, foreign countries require the noise level in the living quarters of the crew not to exceed 65 dB and the level in the engineroom not to exceed 100 dB. Research on noise reduction and insulation is just beginning in China. Also, there has been no systematic study of the structure of parts and components and the theory of burning low-quality oil in ships. The problem of substituting other fuels for oil has not yet been put on the agenda. Much needs to be done with regard to accessories, also; for example, the problem of water pump sealings still awaits a theoretical, structural and material solution. All in all, the prospects for ship diesel engines are bright, but our tasks will be enormous and tedious.

Gas turbine expert chief engineer Li Genchen [2621 2704 3819] talked at the meeting about the "current development status of and future prospects for steam and gas power on ships." Li advocated the need for a research and development policy that is stable, definitive, solidly based and can lead to concrete results. He pointed out that in foreign nations, the work of developing large-scale power equipment is handled entirely by large enterprises. These enterprises are not just production factories; they also engage in market investigation, research, and prediction, in research and development, in production, in sales, and in after-sales service.

Participants at the meeting welcomed the addresses given, and there was a consensus that these addresses served the purpose of strengthening mutual understanding among the departments and improving coordination in technical development.

Each department also held discussions on special topics, wherein the participants freely expressed their opinions concerning current problems in their specialty. There were active discussions. These discussions provided in-depth understanding of the problems and helped to define future goals and directions of effort. Based on these discussions, 50 suggestions and opinions were made by the departments.

The main purpose of the annual meeting is to present papers. On average, each paper and discussion took about 50 minutes. Except in special cases, the question and

answer periods proceeded at a smooth pace. Better results were achieved by papers that were concise and had clear emphasis and by addresses that were well prepared and delivered.

This reporter interviewed the author of one of the outstanding papers, "Meshing Process of the S.S.S. Clutch," by Engineer Su Wendou [5685 2429 2435]. According to Su, the S.S.S. clutch has been successfully used in ship power equipment for many years, but there have also been cases of damaged ratchet and pawl mechanisms. Therefore, it is of practical significance and interest to clutch manufacturers, as well as to power equipment users, to investigate the dynamics of the clutch mesh process; to analyze and calculate the dynamic loads on such components as the ratchet and pawl, the spiral gear, the drive gear, and the bearings; to inspect the vibration conditions of the system; and to evaluate the validity of the choices of structural parameters. In achieving his results to date, Su has been doing theoretical and experimental investigation on this topic since 1975. Su also expressed interest in technical exchanges with colleagues here and abroad.

The success of this annual meeting cannot be separated from the thorough preparatory work carried out prior to the meeting. Secretaries in the turbine committee and in the departments did a lot of work in organizing calls for papers, in selecting, evaluating, and printing them, in soliciting experts' opinions, and in preparing the authors' replies. Prior to the meeting, 332 written inquiries containing 1,500 questions directed to the 64 papers were received; included in this correspondence, in addition to the questions asked, there were personal experiences, checks on equations and data, and other relevant information. These responses helped to ensure the quality of the selected papers and to improve the efficiency and level of the meeting.

One can anticipate that, through the technical exchanges of the annual meeting of this society, Chinese ship turbine engineers will make more contributions in improving our nation's ship turbine engineering standards.

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## INDUSTRY

### GUANGDONG ENTERPRISES INCREASE PRODUCTION

Beijing RENMIN RIBAO in Chinese 21 Mar 81 p 1

["Industrial Production and State Revenue Increase in Guangdong"]

[Text] Guangdong Province has correctly handled the relationship between centralization and economic growth in the course of readjusting the national economy. The economic situation is gratifying this year, with industrial production increased, state revenue increased, the market enlivened, and vigorous development on the economic front. According to statistics compiled by the economic department, the gross value of industrial output in January and February increased 10.1 percent over the same period of last year, with light industry production up 12.3 percent. Sewing machines, bicycles, and watches increased by 22 to 26 percent. Switching to production serving light industry and export trade, the engineering industry increased production 3.8 percent over the corresponding period of last year. Production developed vigorously in Guangzhou, Foshan, Shantou, and Jiangmen cities. Shenzhen and Zhuhai, two special economic areas, vigorously expanded their economic activities with foreign countries. In January and February, state revenue increased 7.2 percent for the whole province and 17.29 percent for Guangzhou Municipality.

This situation has arisen since the leading provincial organs correctly grasped the spirit of the Central Work Conference and comprehensively implemented the policy of readjustment. For example, when it comes to important readjustment measures, they ensured a high degree of centralization and a strict and resolute implementation of important policy measures, while at the same time emphasizing the need to carry on with the policies and measures that have been found effective in enlivening the economy since the Third Plenum. In order to prevent centralization from stifling economic activities, they found it necessary to continue to give enterprises and brigades-communes the power of self-management and to give the governments at various levels the necessary power to proceed with various undertakings in the light of realities and according to local conditions. The provincial authorities must continue to refrain from exercising too meticulous, too strict, and too rigid control in dealing with various prefectures and municipalities, and so must the provincial departments in dealing with their subordinate enterprise units.

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CSO: 4006/267



## INDUSTRY

### HENAN METALLURGICAL INDUSTRY NOW SHOWING A PROFIT

Beijing RENMIN RIBAO in Chinese 21 Mar 81 p 1

['Henan--Metallurgical Industry Undergoes New Changes Through Economic Readjustment']

[Text] According to HENAN RIBAO, Henan's metallurgical industry, which lost a great deal of money 2 years ago, has become one of the provincial departments delivering the largest amount of profit to the higher level, as a result of 2 years of readjustment and rectification. Below are the figures for the past 4 years:

1977: 136 million yuan loss  
1978: 20 million yuan loss  
1979: 39 million yuan profit  
1980: 130 million yuan profit.

This is the result of implementing the eight-character policy in Henan's metallurgical industry. The readjustment policy was carried out, and economic results were stressed. Twenty-one small ironworks which were turning out poor-quality, high-priced products were shut down or suspended. At the same time, the management of existing enterprises was strengthened. This reversed the losses and earned a profit of 130 million yuan last year.

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## INDUSTRY

### BRIEFS

STATE COUNCIL DEPARTMENTS' CIRCULAR--Beijing, 29 Mar (XINHUA)--The State Economic Commission, State Bureau of Labor, State Capital Construction Commission, State Council Office on National Defense Industry, State Agriculture Commission, State Council Finance and Trade Group, Ministries of Public Security and Health, and All-China Federation of Trade Unions recently issued a joint "circular concerning launching safety activities" in May in order to ensure safety in production, reduce accidental deaths and injuries, improve working conditions and control the spread of occupational diseases. [Beijing XINHUA Domestic Service in Chinese 1155 GMT 29 Mar 81]

INDUSTRIALIZED BUILDING CONSTRUCTION--Building construction departments in Jiangsu's Changzhou Municipality and Guangxi's Nanning Municipality have adopted an industrialized mass production method in building construction, thereby speeding up construction and turning out large quantities of good quality buildings. In 1980 Changzhou's and Nanning's building construction capacity rose to 400,000 and 600,000 square meters respectively, from 180,000 and 350,000 square meters of 1979. Since 1978 the State Capital Construction Commission and the General Administration of Building Construction have invested 23 million yuan in the 2 municipalities to experiment with the new method. Recently the General Administration of Building Construction held in Changzhou a discussion meeting to popularize the experience of Changzhou and Nanning in industrialized building construction. [Beijing Domestic Service in Mandarin 1200 GMT 18 Apr 81]

CSO: 4006/284

## DOMESTIC TRADE

### BRIEFS

**RATION-FREE PERIOD EXTENSION**--The Ministry of Commerce recently issued a circular calling for continued enforcement of the regulation which permits the purchase of terylene-cotton blended fabrics without cloth ration coupons for the time being. The circular says: To continue to meet the people's need in clothing and to support production, expand sales and help withdraw currency from circulation, a decision has been made to continue to extend the temporary period in which terylene-cotton blended fabrics may be offered customers without requiring cloth ration coupons. The circular calls on commercial departments at all levels to take active steps to make the source of such goods available, improve the channels of circulation, increase marketing establishments and expand their sales in every way they can. [Text] [Beijing Domestic Service in Mandarin 1200 GMT 16 Apr 81]

**COMMERCIAL, SERVICE OUTLETS**--Beijing, 18 Apr (XINHUA)--Urban and rural commercial, food and service outlets in China have grown rapidly. According to statistics, in 1980 there were 790,000 state-operated, collectively owned and individual business outlets in county seats and bigger cities throughout the country, an increase of 140 percent over the number in 1979. There were more than 1,205,000 supply and marketing cooperatives, retail shops, purchasing and marketing agencies, cooperative stores, and privately owned stores in the rural areas, an all time record. At present the number of commercial, food and service outlets in the country has increased by 300 percent over that in 1976, but the number is still not enough to meet the needs of the people. [Beijing Xinhua Domestic Service in Chinese 0739 GMT 18 Apr 81]

CSO: 4006/283

## FOREIGN TRADE

### SHANGHAI SHIPYARD REGISTERS EXPORT GAIN IN 1980

Beijing CHUANBO SHIJIE [SHIP WORLD] in Chinese No 3, 1 Feb 81 p 1

[Text] In 1980, the Shanghai Shipyard registered a gain in its export business which accounted for 14.2 percent of its total annual production value. During that period, it accepted bids from 86 clients from four different countries and areas, thus extending considerably its business connections. Progress was made by this shipyard in its export business during 1980 in mainly the four following areas:

First, its external business was diversified. During 1980, it not only continued to engage in ship construction for export, (including the completion and delivery of four 900-horsepower tugs to Romania), but also expanded its operations in repairing foreign shipping and exporting such products as heavy rigging and deck and anti-corrosion accessories. Through such operations as the production of imported diesel engines on a trial basis and the establishment of container factories as a means to reduce trade deficits, it expanded its projects of cooperation with foreign business enterprises.

Secondly, there was an increase in the construction of ships for export. In 1978, ships of the "Shaoxing" class for export were relatively speaking technically inferior. From the end of 1979 to May 1980, the Chinese-Polish Shipping Company Limited placed orders for four 16,000-ton multi-purpose freighters. In November, this shipyard signed contracts with two West German shipowners for the construction of four 12,300-ton container ships. The technical standard of these ships was comparable to that of the most advanced ships of the type. They were automated to a higher degree, especially those built for export to West Germany for the first time, indicating that the quality of the ships built by this shipyard was of a sufficiently high standard to compete in the international market.

Thirdly, the quality of ships and machinery built for export was raised. A good example was provided by the construction of the loading device of the first 16,000-ton multi-purpose ship in April of last year. In the process of construction, the large number of workers and technicians spared no effort in planning and construction, adopting extensively the latest skills and techniques such as the use of carbon dioxide shielded welding, yellow sand liner single-and double-sided welding, sectional assembly, etc. This resulted not only in increased efficiency, but also a high standard of quality. By the end of 1980, 346 out of 355 items on the ship, or 97.46 percent, were accepted as having met requirements while the rate of acceptance of the hull welding reached 99.5 percent, thus earning favorable comment from foreign construction supervisors. As for the manufacturing of imported machinery, the

quality control of the whole process from the partial and complete assembly to the trial run of the machines as well as the quality of the products were considerably raised. The rate of acceptance reached 99.72 percent for the processing of the machinery, a rate higher than the standard agreed upon.

Fourthly, innovations in the method of operations were made. In repairing foreign ships, the shipyard paid great attention to tightening control over operations and offering various valuable services. In July 1980, while the Greek freighter "Nicolas" was unloading in Shanghai, a heavy boom which had snapped required emergency repairs. Technicians were assigned by the shipyard to repair it right away, much to the satisfaction of the shipowners. In 1980, this shipyard undertook the repair of 315 foreign ships.

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CSO: 4005/254



## FOREIGN TRADE

### SPRING TOURISM RUSH COMES TO BEIJING

OW240348 Beijing XINHUA in English 0248 GMT 24 Apr 81

[Text] Beijing, 24 Apr (XINHUA)—Spring tourism, now at its peak in Beijing, has added attractions this season with the opening of a number of new scenic and historical sites.

With the coming of the warm weather, about 300,000 visitors a day have taken trips to tourist sites in and around the Chinese capital over the past 2 weeks. On Sundays, the number reaches 600,000.

Every morning, buses of primary and middle school and university students, government and factory workers and crowds of cyclists set out for Beijing's recreation spots.

Among the new attractions are the Shangfangyunshui (?cave), [word indistinct] kilometers west of Beijing, reputed to be the largest (?cave) in China, and the 1,600-year-old Pool and Oak Temple 50 kilometers northwest of the city. Both of them were opened last year.

More than 10,000 visitors a day come to the Pool and Oak Temple, once a center of Buddhism in China. Most of the visitors to Shangfangyunshui Cave are young people. The tourists have to negotiate many kilometers of mountain paths before reaching the cave, which is 600 meters deep, has six large chambers and contains a 37-meter high stalagmite, the biggest in China.

Another popular haunt is the Yonghegong Temple which was opened to the public this year. Built at the end of the 17th Century, it is the largest lamasery in Beijing. The most popular of all sites is Zhongshan Park, on the western edge of the Palace Museum in central Beijing. The park has received more than 50,000 visitors per day in the past 2 weeks, partly because of its famous flower displays. On Sundays, its electric-game playground alone entertains 16,000 children.

The Summer Palace, a spreading imperial playground on the shores of Kunming Lake in the city's northwest, displays a blossoming magnolia more than 100 years old. More than 20,000 people have been attracted to the park every day since 15 March. Sundays see as many as 60,000 tourists.

The crowds visiting Beijing Zoo over the past fortnight have also been several times larger than usual. In March, six-month-old Liang Liang, the second giant panda conceived by artificial insemination in the zoo, was allowed out in public for the first time.

The first groups of tourists have recently arrived at a section of the Great Wall located 100 kilometers northeast of the city and known as the "Second Badaling." Badaling is the most famous sightseeing part of the Great Wall. "Second Badaling" has 140 watch towers and was the subject of a survey by the State Administrative Bureau of Museums and Archaeological data last year.

More than 1 month ago, the municipal government began ordering food, drink and other goods as well as organizing cars and buses, in anticipation of a spring tourism rush. An official from the Parks and Woods Bureau estimated that the number of people that will be travelling and touring in and around Beijing will surpass 10 million from 15 March till May.

CSO: 4020/173

## FOREIGN TRADE

### BRIEFS

SHIP EXPORTS--Beijing, 20 Apr (XINHUA)--China has begun to export ships. From 1980 to March 1981 shipyards under the PRC's Sixth Ministry of Machine Building signed contracts with businesses in the United States, Italy, West Germany and Hong Kong for the building of ships with a total tonnage of 580,000 tons, including eleven 27,000-ton bulk carriers, three 36,000-ton bulk carriers and scores of other types of cargo ships, container ships, barges, tugboats and drilling platforms. [OW211421 Beijing Xinhua Domestic Service in Chinese 0005 GMT 20 Apr 81]

GUANGDONG PREFECTURE TRADE--In 1980, enterprises in 13 counties and municipalities in Shantou prefecture signed 500 contracts worth \$9 million with foreign merchants on processing products with materials supplied by the customers and on compensation trade. In the first 2 months of this year, there was a greater development of foreign trade over the corresponding period of last year. The light and handicraft industries in this prefecture are also doing better and the commodity economy is more developed. The prefecture has put more emphasis on developing electronics and wristwatches, clothing, fishing nets and packaging in the cities and towns. According to statistics in 1980, processing textile products with materials supplied by the customers amounted to \$7 million. During the same period, 30,000 more people found jobs in this prefecture over the previous year. [HK150801 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 10 Apr 81]

GUANGDONG EXPORT FAIR--Guangzhou, 16 Apr (XINHUA)--China's 1981 Spring Export Commodities Fair opened yesterday at the Guangzhou Foreign Trade Center. This is the 49th session since the fair began in 1957. The fair, held in spring and autumn sessions every year, is the occasion when foreign businessmen and businessmen in Hong Kong and Macao flock in Guangzhou for business negotiations with China. An exhibition of China's export commodities is held when the fair is in session, usually reflecting the latest development of China's economic life. On display in the current exhibition are consumer goods and scientific instruments produced by China's defense factories. "This can serve as an example to show how China is making its industries consumer-oriented," a spokesman for the fair told XINHUA. The total volume of China's import and export increased two and a half times between 1977 and 1980. On the basis of this, the spokesman said, China will continue to expand its foreign trade. [Text] [OW201136 Beijing XINHUA in English 1206 GMT 16 Apr 81]

## GENERAL

### ECONOMIC GAINS IN HEILONGJIANG REPORTED

Harbin HEILONGJIANG RIBAO 3 Feb 81 p 1

[Report: "Readjustment Policy Put Forward by Third Plenary Session of the 11th Party Central Committee Initially Implemented--2 Years of Economic Work In the Whole Province Bring Outstanding Results"]

[Text] The information supplied by statistics departments clearly shows that since the Third Plenary Session of the 11th Party Central Committee, our province has achieved relatively outstanding results in its initial steps to readjust the national economy. A series of new changes have taken place in all items of production and the life of the masses.

In the past, good and poor harvests in the annual total grain output of our province fluctuated between 6-7 or 7-8 billion jin. Which in recent years has basically stabilized during disaster years. The 2 years 1978-1980 had bumper harvests with an annual total output of about 29 billion jin. The output of wheat in 1980 reached a record high of 7.5 billion jin.

The sown area of industrial crops has expanded. In 1980 it increased by 67.6 percent over that of 1979, more than double the 5.05 million mu in 1976. The total output of several chief industrial crops has increased many times. The total output of beets in 1980 increased by 98 percent over 1979, more than double that in 1976. Raw materials of sugar provided for the state was 300,000 metric tons, adequately satisfying the needs of sugar mills, which has lacked supplies for many years. Small oil-bearing crops in 1980 increased 1.8 times over 1979 and 2.5 times over 1976. Hemp increased 1.24 times over 1976, including a flax increase of 1.35 times. While industrial crops had comparatively large increases in 1980, under the conditions of increase in sown area, the areas of grain fields still exceeded that in 1978 by 2.56 million mu, maintaining a relatively high level.

Animal husbandry also grew. Comparing the amount of livestock on hand at the end of 1980 with that in 1976, milch cows increased by 27.6 and mountain sheep by 43 percent. The output of breeding silk worms in 1980 increased by 70.4 percent over 1976.

Reasonable changes suitable to the needs of society have begun to take place as light and heavy industries experience growth in speed, proportion, internal structure, and the structure of commodities.



The output value of light industry in 1980 reached 7.28 billion yuan, an increase of 25.5 percent over 1978 and 49.1 percent over 1976.

Under planned guidance, an estimated 6 billion yuan in commodity output value was realized through market regulation in the entire province, about 27 percent of the total industrial output value.

Diversified forms of integrated bodies have grown. The various types of economic integration in the entire province number 161.

The quality of commodities has been enhanced and the variety of colors and designs has been increased. Of the 759 products which undergo key inspection in the entire province, 210 types have been rated as high-quality local products. Among the dairy products rated high-quality in the nation, 7 are from our province. Moreover, 10 types of textile products were for the first time rated as high-quality brand name products in the entire country. In a nationwide comparison of the quality of products, our province received 12 silver awards. According to incomplete statistics from Harbin, Qiqihar, Mudanjiang and Jiamusi, over 600 new products were trial manufactured in over 3,000 new designs.

The growth rate of heavy industry has begun to slow down and decrease. In 1980 the output value of heavy industry dropped by 0.8 percent from 1979, but still represented an increase of 20.1 percent over 1976. In the ratio of light and heavy industries, light industry has risen from 28.8 percent in 1976 to 33.6 percent in 1980.

Enterprises in the system of collective ownership experienced new development. The estimated growth rate of the total output value of industry in 1980 is 4 percent, of which the growth of enterprises owned by the entire people is 2.8 percent and that of enterprises in the system of collective ownership is 10.5 percent. The proportion of output value of enterprises in the system of collective ownership rose from 14.5 to 16.1 percent.

The estimated profits to be turned over to higher authorities by industrial enterprises in the entire province at the end of November 1980 reached 342 million yuan, fulfilling the annual plan by 139 percent and representing a growth of 12.9 percent over the same period last year.

1980 was the first year of implementation of the new fiscal system and was also the year when the fiscal tasks of the entire province were completed best. Financial collection and cutting down expenses in the province brought a surplus of about 800 million yuan.

Investment in residential housing construction by all levels, departments, and units in 1980 reached 471 million yuan, an increase of 1.7 times over 1976. The proportion of this in the total amount of investment has increased from 10.8 in 1976 to 18.4 percent. This is unprecedented in our province. The residential area completed from 1977 to 1980 reached 9,435,000 square meters, of which 3,130,000 square meters were completed in 1980. In 4 years, 190,000 households moved into new housing or an area equivalent to 61.5 percent of the total completed residential area during the 20 years from 1957 to 1976.

According to the statistics of 11 municipalities, the number of establishments in the commercial network in 1979 increased by 52.9 percent, food and drink network by 60.9 percent, and service network by 99.2 percent as compared with 1978.

The estimated total retail value of social commodities in 1980 reached 9.3 billion yuan, an increase of 50.2 percent over 1976.

The average annual purchasing power of residents in towns and rural areas from 1978 to 1980 was 8.14 billion yuan, which is 6.66 billion yuan higher than the annual average during the 20 years from 1957 to 1976. The purchasing power in 3 years increased by 890 million yuan, an average annual increase of 4.9 times over the previous 20 years.

The daily consumer goods consumption has increased. Woollen goods in 1980 reached 6.51 million meters, an increase of 49 percent over 1976 and more than 13 times over 1953. Bicycles reached 557,800, an increase of 46.3 percent over 1976 and 37 times over 1953. Sewing machines reached 181,100, an increase of 14.6 percent over 1976 and 12.6 times more than 1953. Matches reached 920,000, an increase of 40 percent over 1976 and 1.2 times more than 1953. Television sets reached 115,600, or 2.2 times more than 1979. Pork reached 172,200 metric tons, an increase of 66.4 percent over 1976 and 11 times more than 1953. Cloth was the exception. It reached 235 million meters, a decrease of 16.1 percent from 1976.

In 1980 the volume of business in rural trade markets and city agricultural trade markets reached 180 million yuan, an increase of 40.6 percent over 1979. The variety of products increased from 70-80 to over 100 types.

In the 2 years, 1979 and 1980, employment was arranged for 1,202,800 staff workers, of whom 316,000 belonged to the system of ownership of the entire people.

There are about 40,000 self-employed laborers, roughly three times more than 1979.

The per capita income of the province in 1979 reached 503 yuan, equivalent to a gross per capita output value of 568 yuan, which is an increase of 3.9 percent over 1978 and 23.9 percent over 1976. The per capita consumption level of the national income spent on the consumption fund was 261 yuan in 1979, an increase of 5.2 percent over 1978 and 16.5 over 1976.

The average annual wage level of each staff worker in the system of ownership by the entire people reached 841 yuan in 1980, an increase of 15.8 percent over 1978 and 19.8 percent over 1976.

The per capita income of rural communes received from the collective reached 120 yuan in 1980, an increase of 9 percent over 1979 and 70.9 percent over 1976. In 1979 there were 15,000 impoverished production teams in the province, or 3,000 less than 1976. In 1980 a large number of poor production teams turned around.

The surplus savings of residents in towns and rural areas reached 1.49 billion yuan in 1980, an increase of 58.5 percent over 1979. The amount of increase was unprecedented. The proportions of fixed deposits for towns and rural areas were 79.2 and 68.4 percent respectively.

There were 28 institutions of higher education in 1980, an increase of 8 from 1976. Attendance in 1980 numbered 43,600 students, an increase of 30.1 percent over 1978 and 85.5 percent over 1976.

The comrade in charge of economic work pointed out: Many serious problems still exist in various areas of the national economy in our province. In the main, the serious state of imbalance in proportional relationships is still basically unaltered. There is still considerable debt owed in the people's livelihood, a relatively large number of staff workers in the society are looking for employment, and a tremendous effort is still needed to stabilize prices. When we see such a good situation which is rare since the founding of our state, we must at the same time recognize the hidden dangers.

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## GENERAL

### WORKERS' LIVING CONDITIONS IMPROVE IN HEILONGJIANG

Harbin HEILONGJIANG RIBAO in Chinese 22 Feb 81 p 1

[Text] According to data released by the relevant departments, the living conditions of the vast majority of workers in our province have gradually improved since the Third Plenum of the 11th Party Congress.

1. Increased income. Monthly income earned by urban workers to meet their living expenses averages 29.63 yuan each, an increase of 28.8 percent over 1977 and a 60.7-percent increase over 1965.

According to a survey and analysis recently made by the departments in Harbin, Qiqihar, Daqing, Hegang, Yichun, Jiamusi, and Mudanjiang municipalities, the main factors in the increase in workers' income are: An increase in the number of employed. On average, each worker now supports 2.15 persons (including himself), against 2.4 persons in 1977 and 3.69 persons in 1965. An increase in average monthly wages. Wage scales for a group of workers have been restored as a result of grading and promoting thrice and implementing policy. Their monthly wages average 66.85 yuan, a 6.67-percent increase over 1977.

Other factors include: More bonuses. From January through October 1980, bonuses paid through the banks increased 89 percent over the corresponding period of the previous year, averaging 4.21 yuan per capita each month. Each worker receives 5 yuan a month as an adjustment allowance against [rising] prices of eight items of nonstaple foods.

2. Increased consumption of major commodities. In 1980, average consumption of pork in cities and towns amounted to 32 jin per capita, an increase of 15 jin over 1977 and an increase of 9 jin over 1965. The supply of fine grain and sales of nonstaple foods and manufactured goods for daily use also increased compared with the previous year.

According to a survey of the seven municipalities mentioned above, each worker family spent 28.45 yuan per capita. Income balanced expenses, leaving a small surplus. Among the expenses for commodities, while those for foods were increasing year by year, their proportion to the total expenses for commodities was decreasing year by year. Expenses for clothing and articles for use showed a greater increase, with their proportion increasing year by year. On average, each worker household in the seven municipalities had 2.1 bicycles and 2 watches,



which means that each worker in the family had a watch. Each 100 households had 55 sewing machines, 70 radios, and 11.5 TV sets, which means that one-tenth of the worker families had TV's.

3. Faster growth in savings. At the end of 1980, savings in cities and towns amounted to 1.31 billion yuan, an increase of 470 million yuan over the previous year. Savings averaged 136.68 yuan per capita in cities and towns, a record increase of 49.78 yuan over the previous year.

4. Accelerated housing construction. Departments and units at various levels invested 423 million yuan in housing projects in 1980, a record year since the founding of the republic. The area of construction was 5.15 million square meters, with 3.13 million square meters expected to be completed by the end of the year. In the past 4 years, 190,000 families have moved into new housing. According to statistics on 973 worker families in the seven municipalities, living space averaged 3.86 square meters per capita, an increase of 0.66 square meters over 1977.

5. Restoration and development of collective welfare facilities. The number of workers' canteens, public baths, nurseries, clubs, culture rooms, libraries, and sanitariums is increasing year by year. Some plants and stores solved problems of transportation, liquefied gas drums and sewing machines to suit workers' convenience.

6. Drop in proportion of low-income workers and distinct growth in the average income of most worker families. According to a survey of the seven municipalities, families with monthly living-expense income below 20 yuan earned by each worker dropped from 35.8 percent in 1977 to 16.8 percent of the total in 1980; families with an income of 20-50 yuan rose from 61.4 to 76.8 percent; and families with an income above 50 yuan rose from 2.8 to 6.5 percent. The number of indigent families with an income below 15 yuan dropped to 4.7 percent of total.

In 1980, the average figure for monthly living expenses was 18.26 yuan per capita for families with income below 20 yuan and 55.10 yuan per capita for families with income above 50 yuan. Compared with 1977, the difference between the two figures was narrowed 4.9 percent. Survey and analysis indicate that the different living standards of worker families were conditioned mainly by family population and the number of employed.

The data jointly furnished by the provincial bureau of statistics, trade union council, people's bank, labor bureau, commodity price bureau, and commercial bureau offer the hope that the difficult problems of price stabilization, housing shortages and job placement for youths will continually be taken into account and solved.

Workers' living conditions were affected by rising prices. According to a survey of 300 worker families in Harbin, 68 percent of the families had an average income of at least 35 yuan. Given the small number of employed and the large number of family members needing support, the monthly allowance of 5 yuan for each worker to adjust for the prices of nonstaple foods was not enough to cover the actual rise in commodity prices.

The data further state that living-expense income (or wage level) shows a great difference between workers in different jobs and between workers in different departments. A survey of 1,034 staff members and workers in various industrial and commercial departments, schools, and organizations in Harbin showed that the present wage levels basically depend on the length of one's service. Since 1958, the starting wage for new workers has gradually fallen below the wages of those workers who joined before 1956. In terms of actual income, workers in industrial and commercial departments are at a higher level; having no bonuses to earn, the staff and workers in the education departments are at a low level; and those working for organizations are at an even lower level.

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